

### **Amendment to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

Claim 1 (Currently Amended): A composition to improve bioenergy metabolism of cells consisting essentially of: two or more chemical substances of Krebs cycle, wherein the chemical substances are ~~intermediates of the cycle and/or precursors and cofactors thereof~~ selected from the group consisting of succinate, fumarate, L-malate,  $\alpha$ -ketoglutarate, citrate, cis-aconitate, isocitrate, oxalsuccinate, succinyl-coenzyme A, succinate, fumarate, L-malate, oxalacetate, acetyl-coenzyme A, pyruvate, lipoic Acid, lipoamide, acetyl-lipoamide, lysine, carnitine, ascorbate, thiamine, riboflavin, nicotinic acid, niacinamide, pantothenate, nicotinamide-adenine dinucleotide, reduced nicotinamide-adenine dinucleotide, nicotinamide-adenine dinucleotide phosphate, reduced nicotinamide-adenine dinucleotide phosphate, quinolinate, flavin-adenine dinucleotide, reduced flavin-adenine dinucleotide, flavin mononucleotide, reduced flavin mononucleotide, adenosine diphosphate, adenosine triphosphate, guanosine diphosphate, guanosine triphosphate, magnesium ion, calcium ion, manganese ion, copper iron-sulfate, and molybdenum; wherein the composition is in the form of pharmaceutically acceptable carriers for consumption comprising tablets, pills, powders for oral suspension, capsules, liquid dosage forms, injections, infusions, inhalations, suppositories, or other pharmaceutically acceptable carriers and/or means of delivery.

Claim 2 (canceled)

Claim 3 (canceled)

Claim 4 (withdrawn): A composition to improve bionergy metabolism of cells comprising two or more chemical substances of respiratory chain cycle, wherein the chemical substances are intermediates of the cycle and /or precursors and cofactors thereof.

Claim 5 (withdrawn): The composition according to claim 4, wherein the chemical substances of respiratory chain cycle are selected from the group consisting of ubiquinone, ubiquinol, heme a, heme b and heme c.

Claim 6 (withdrawn): A composition to improve bionergy metabolism of cells comprising two or more chemical substances of urea cycle, wherein the chemical substances are intermediates of the cycle and /or precursors and cofactors thereof.

Claim 7 (withdrawn): The composition according to claim 6, wherein the chemical substances of urea cycle are selected from the group consisting of citrulline, argininosuccinate, arginine, ornithine and aspartate.

Claim 8 (canceled)

Claim 9 (canceled)

Claim 10 (withdrawn): A method for improving bioenergy metabolism of cells, comprising the step of administering to a human a composition which comprises two or more chemical substances of Krebs cycle, wherein the chemical substances are intermediates of the cycle and/or precursors and cofactors thereof.

Claim 11 (withdrawn): The method according to claim 10, wherein the chemical substances of Krebs cycle are selected from the group consisting of succinate, fumarate, L-malate, and  $\alpha$ -ketoglutarate.

Claim 12 (withdrawn): The method according to claim 10, wherein the chemical substances of Krebs Cycle are selected from the group consisting of citrate, cis-aconitate,

isocitrate, oxalsuccinate,  $\alpha$ -ketoglutarate, succinyl-coenzyme A, succinate, fumarate, L-malate, oxalacetate, acetyl-coenzyme A and pyruvate.

Claim 13 (withdrawn): A method for improving bioenergy metabolism of cells, comprising the step of administering to a human a composition which comprises two or more chemical substances of respiratory chain cycle, wherein the chemical substances are intermediates of the cycle and/or precursors and cofactors thereof.

Claim 14 (withdrawn): The method according to claim 13, wherein the chemical substances of respiratory chain cycle are selected from the group consisting of ubiquinone, ubiquinol, heme a, heme b and heme c.

Claim 15 (withdrawn): A method for improving bioenergy metabolism of cells, comprising the step of administering to a human a composition which comprises two or more chemical substances of urea cycle, wherein the chemical substances are intermediates of the cycle and/or precursors and cofactors thereof.

Claim 16 (withdrawn): The method according to claim 15, wherein the chemical substances of urea cycle are selected from the group consisting of citrulline, argininosuccinate, arginine, ornithine and aspartate.

Claim 17 (withdrawn): A method for improving bioenergy metabolism of cells, comprising the step of administering to a human a composition which comprises:

Biochemical Substances	Amount/ Day
Succinate	0.01-100 mg
Fumarate	0.01-100 mg
L-Malate	0.01-100 mg
$\alpha$ -Ketoglutarate	0.01-100 mg

Claim 18 (withdrawn): A method for improving bionenergy metabolism of cells, comprising the step of administering to a human a composition which comprises:

<b>Biochemical Substances</b>	<b>Amount/ Day</b>
Pyruvate	0.01-100 mg
Acetyl –Coenzyme a	0.01-100 mg
Citrate	0.01-100 mg
Cis-Aconitate	0.01-100 mg
Isocitrate	0.01-100 mg
Oxalsuccinate	0.01-100 mg
2-Oxo-Glutarate	0.01-100 mg
Succinyl-Coenzyme A	0.01-100 mg
Oxaloacetate	0.01-100 mg

Claim 19 (withdrawn): A method for improving bionenergy metabolism of cells, comprising the step of administering to a human a composition which comprises:

<b>Biochemical Substances</b>	<b>Amount/ Day</b>
Coenzyme Q-10 (Ubiquinone)	0.01-20 mg
Ubihydroquinone (Ubiquinol)	0.01-20 mg
Heme a (Part of Cytochrome a)	0.01-20 mg
Heme b (Part of Cytochrome b)	0.01-20 mg
Heme c (Part of Cytochrome c)	0.01-20 mg

Claim 20 (withdrawn): A method for improving bionenergy metabolism of cells, comprising the step of administering to a human a composition which comprises:

<b>Biochemical Substances</b>	<b>Amount/ Day</b>
Citrulline	0.01-100 mg

Arginosuccinate	0.01-100 mg
Arginine	0.01-100 mg
Ornithine	0.01-100 mg
Aspartate	0.01-100 mg

Claim 21 (withdrawn): A method for improving bionenergy metabolism of cells, comprising the step of administering to a human a composition which comprises:

<b>Biochemical Substances</b>	<b>Amount/ Day</b>
Lipoic Acid	0.01-100 mg
Lipoamide (Lipoic Acid + Lysine)	0.01-20 mg
Acetyl-Lipoamide	0.01-100 mg
Lysine	0.01-100 mg
Carnitine	0.01-100 mg
Ascorbate	0.01-200 mg
Thiamine	0.01-10 mg
Riboflavin	0.01-10 mg
Nicotinic Acid	0.01-10 mg
Niacinamide	0.01-10 mg
Pantothenate	0.01-10 mg
Nicotinamide-Adenine Dinucleotide (NAD)	0.01-10 mg
Reduced Nicotinamide Adenine Dinucleotide	0.01-10 mg
Nicotinamide-Adenine Dinucleotide Phosphate (NADP)	0.01-10 mg

reduced NADP (NADPH)	0.01-10 mg
Quinolate (NAD/NADP precursor)	0.01-10 mg
Flavin-Adenine Dinucleotide (FAD)	0.01-10 mg
Reduced Flavin-Adenine Dinucleotide (FADH)	0.01-10 mg
Flavin Mononucleotide (FMN)	0.01-10 mg
Reduced Flavin Mononucleotide (FMNH <sub>2</sub> )	0.01-10 mg
Adenosine, Diphosphate (ADP)	0.01-10 mg
Adenosine, Triphosphate (ATP)	0.01-10 mg
Guanosine Diphosphate (GDP)	0.01-10 mg
Guanosine Triphosphate (GTP)	0.01-10 mg
Magnesium (Mg <sup>2+</sup> )	0.01-10 mg
Copper	0.01-10 mg
Iron-Sulfate	0.01-10 mg
Molybdenum	0.01-10 mg

Claim 22 (withdrawn): A method for improving bionenergy metabolism of cells, comprising the step of administering to a human a composition which comprises:

Biochemical Substances	Amount/ Day
Succinate	100 mg

Fumarate	100 mg
L-Malate	100 mg
$\alpha$ -Ketoglutarate	100 mg
Pyruvate	100 mg
Acetyl-CoA	100 mg
Citrate	200 mg
Cis-Aconitate	100 mg
Isocitrate	100 mg
Oxalsuccinate	100 mg
2-Oxo-Glutarate	100 mg
succinyl-Coenzyme A	100 mg
Coenzyme Q-10 (Ubiquinone)	20 mg
Ubihydroquinone (Ubiquinol)	20 MG
Arginine	100 mg
Carnitine	100 mg
Lysine	100 mg
Ascorbate	200 mg
Thiamine	10 mg
Riboflavin	10 mg
Nicotinic Acid	10 mg

Claim 23 (new): A composition for improving bionenergy metabolism of cells, wherein the composition is in the form of pharmaceutically acceptable carriers for consumption comprising tablets, pills, powders for oral suspension, capsules, liquid dosage forms,

injections, infusions, inhalations, suppositories, or other pharmaceutically acceptable carriers and/or means of delivery consisting essentially of:

<b>Biochemical Substances</b>	<b>Amount/ Day</b>
Succinate	0.01-100 mg
Fumarate	0.01-100 mg
L-Malate	0.01-100 mg
$\alpha$ -Ketoglutarate	0.01-100 mg

Claim 24 (new): A composition for improving bionenergy metabolism of cells, wherein the composition is in the form of pharmaceutically acceptable carriers for consumption comprising tablets, pills, powders for oral suspension, capsules, liquid dosage forms, injections, infusions, inhalations, suppositories, or other pharmaceutically acceptable carriers and/or means of delivery consisting essentially of:

<b>Biochemical Substances</b>	<b>Amount/ Day</b>
Pyruvate	0.01-100 mg
Acetyl –Coenzyme a	0.01-100 mg
Citrate	0.01-100 mg
Cis-Aconitate	0.01-100 mg
Isocitrate	0.01-100 mg
Oxalsuccinate	0.01-100 mg
2-Oxo-Glutarate	0.01-100 mg
Succinyl-Coenzyme A	0.01-100 mg
Oxaloacetate	0.01-100 mg

Claim 25 (new): A composition for improving bionenergy metabolism of cells, wherein the composition is in the form of pharmaceutically acceptable carriers for consumption



comprising tablets, pills, powders for oral suspension, capsules, liquid dosage forms, injections, infusions, inhalations, suppositories, or other pharmaceutically acceptable carriers and/or means of delivery comprising:

<b>Biochemical Substances</b>	<b>Amount/ Day</b>
Lipoic Acid	0.01-100 mg
Lipoamide (Lipoic Acid + Lysine)	0.01-20 mg
Acetyl-Lipoamide	0.01-100 mg
Lysine	0.01-100 mg
Carnitine	0.01-100 mg
Ascorbate	0.01-200 mg
Thiamine	0.01-10 mg
Riboflavin	0.01-10 mg
Nicotinic Acid	0.01-10 mg
Niacinamide	0.01-10 mg
Pantothenate	0.01-10 mg
Nicotinamide-Adenine Dinucleotide (NAD)	0.01-10 mg
Reduced Nicotinamide Adenine Dinucleotide	0.01-10 mg
Nicotinamide-Adenine Dinucleotide Phosphate (NADP)	0.01-10 mg
reduced NADP (NADPH)	0.01-10 mg
Quinolate (NAD/NADP precursor)	0.01-10 mg

Flavin-Adenine Dinucleotide (FAD)	0.01-10 mg
Reduced Flavin-Adenine Dinucleotide (FADH)	0.01-10 mg
Flavin Mononucleotide (FMN)	0.01-10 mg
Reduced Flavin Mononucleotide (FMNH <sub>2</sub> )	0.01-10 mg
Adenosine, Diphosphate (ADP)	0.01-10 mg
Adenosine, Triphosphate (ATP)	0.01-10 mg
Guanosine Diphosphate (GDP)	0.01-10 mg
Guanosine Triphosphate (GTP)	0.01-10 mg
Magnesium (Mg <sup>2+</sup> )	0.01-10 mg
Copper	0.01-10 mg
Iron-Sulfate	0.01-10 mg
Molybdenum	0.01-10 mg

Claim 26 (new): A composition for improving bionenergy metabolism of cells, wherein the composition is in the form of pharmaceutically acceptable carriers for consumption comprising tablets, pills, powders for oral suspension, capsules, liquid dosage forms, injections, infusions, inhalations, suppositories, or other pharmaceutically acceptable carriers and/or means of delivery comprising:

Biochemical Substances	Amount/ Day
Succinate	100 mg

Fumarate	100 mg
L-Malate	100 mg
$\alpha$ -Ketoglutarate	100 mg
Pyruvate	100 mg
Acetyl-CoA	100 mg
Citrate	200 mg
Cis-Aconitate	100 mg
Isocitrate	100 mg
Oxalsuccinate	100 mg
2-Oxo-Glutarate	100 mg
succinyl-Coenzyme A	100 mg
Coenzyme Q-10 (Ubiquinone)	20 mg
Ubihydroquinone (Ubiquinol)	20 MG
Arginine	100 mg
Carnitine	100 mg
Lysine	100 mg
Ascorbate	200 mg
Thiamine	10 mg
Riboflavin	10 mg
Nicotinic Acid	10 mg